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Notice of Allowability	Application No.	Applicant(s)	
	09/737,093	PUKKILA ET AL.	
	Examiner	Art Unit	
	Harry Vartanian	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/4/2005.
2. ☒ The allowed claim(s) is/are 1-13, 15-31.
3. ☒ The drawings filed on 14 December 2000 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Henry Steckler(Reg# 24,139) on 4/25/2005.

The application has been amended as follows:

In Claim 1, Line 13 please change the following:

wherein said generating said[[an]] updated estimate of the

In Claim 1, Line 16 please add the following:

decoding operation performed after said equalizing;

between equalizing a signal and decoding the equalized signal, processing the signal, and

between obtaining feedback information from the signal after equalization and generating said updated estimate, inversely processing the feedback information to cancel from the feedback information certain effects caused by said processing the signal.

In Claim 2, please change the following:

A method according to claim 1, wherein ~~the step of~~ obtaining feedback information from the signal after equalization is performed after ~~the step of~~ decoding the

In Claim 3, please change the following:

A method according to claim 1, wherein ~~the step of~~ obtaining feedback information from the signal after equalization is performed at least partly before ~~the step of~~

In Claim 4, please change the following:

A method according to claim 1, comprising ~~the steps of~~:

In Claim 5, please change the following:

A method according to claim 4, wherein step e) comprises ~~the step of~~ making a number of soft decoding decisions, thus generating a second piece of soft decision output, and the method further comprises ~~the step of~~ feeding back said second piece of soft decision output to said ~~step of~~ generating an updated estimate of the impulse response of the radio channel.

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In Claim 6, please change the following:

A method according to claim 4, wherein step e) comprises ~~the step of~~ making a number of hard decoding decisions, thus generating a second piece of hard decision output, and the method further comprises ~~the step of~~ feeding back said second piece of hard decision output to said ~~step of~~ generating an updated estimate of the impulse response of the radio channel.

In Claim 7, please change the following:

A method according to claim 4, comprising ~~the step of~~ feeding back said first piece of hard decision output to ~~the step of~~

In Claim 8, please change the following:

A method according to claim 4, comprising ~~the step of~~ feeding back said first piece of soft decision output to ~~the step of~~

In Claim 11, please change the following:

A method according to claim 4, additionally comprising ~~the steps of~~:

feeding back said decoding decisions to ~~the step of~~ equalizing said sample sequence,

In Claim 11, Line 5 please change the following:

-repeatedly iterating through steps d) and e), and

In Claim 12, please change the following:

A method according to claim 4, comprising ~~the steps of~~:

In Claim 12, Line 8 please change the following:

transmission sequence was received, and

In Claim 13, please change the following:

A method according to Claim 4, wherein:

- step a) comprises ~~the step of~~ receiving simultaneously

In Claim 13, Line 8 change the following:

which is different than said first known symbol sequence, and

PLEASE CANCEL Claim 14.

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In Claim 15, Line 19 please add the following:

decoding the equalized signal;

between equalizing the received signal and decoding the equalized signal, processing the signal, and

between obtaining feedback information from the signal after equalization and generating said updated estimate, inversely processing the feedback information to cancel from the feedback information certain effects caused by said processing the signal.

In Claim 16, please change the following:

A method according to claim 15, wherein said ~~step of~~ equalizing the signal comprises ~~the step of~~ equalizing the

In Claim 17, please change the following:

A method according to claim 15, comprising ~~the steps of~~:

In Claim 18, please change the following:

A method according to claim 17, comprising ~~the step of~~;

In Claim 19, please change the following:

A method according to claim 17, comprising ~~the steps of~~;

In Claim 27, line 11 please change the following:

~~undated~~updated estimate of the impulse response of the radio

In Claim 27, line 15 please change the following:

decoding the equalized signal;

between equalizing the signal and decoding the equalized signal, processing the signal, and

between obtaining feedback information from the signal after equalization and generating said updated estimate, inversely processing the feedback information to cancel from the feedback information certain effects caused by said processing the signal.

In Claim 28, line 10 please change the following:

- equalizing the signal by using ~~[[an]]~~said updated estimate and said

In Claim 28, lines 13-15 please change the following:

- iteratively repeating the generation of ~~[[an]]~~said updated estimate of the impulse response of the radio channel and equalizing the signal by using ~~[[an]]~~said updated estimate and said feedback

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In Claim 28, lines 17-19 please change the following:

[[an]]said updated estimate of the impulse response channel and the number of iterations of signal by using [[an]]said updated estimate and of the radio equalizing the said feedback

In Claim 29, line 20 please change the following:

by using said feedback information;

between equalizing the signal and decoding the equalized signal, processing the signal, and

between said means for coupling and generating said updated estimate, inversely processing the feedback information to cancel from the feedback information certain effects caused by said processing the signal.

In Claim 30, line 21 please change the following:

by using said feedback information;

between equalizing the signal and decoding the equalized signal, processing the signal, and

between said means for coupling and generating said updated estimate, inversely processing the feedback information to cancel from the feedback information certain effects caused by said processing the signal.

In Claim 31, please change the following:

to iteratively repeat the generation of [[an]]said updated estimate of the impulse response of the radio channel and the equalization of the signal by using [[an]]said updated estimate and said feedback information, the number of iterations of generating [[an]]said updated estimate of the impulse response of the radio channel and the number of iterations of equalizing the signal by using [[an]]said updated estimate and said feedback

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 571.272.3048. The examiner can normally be reached on 10:00-6:30 Mondays to Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571.272.3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harry Vartanian
Examiner
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